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AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1-6. (Canceled)

7. (Currently Amended) The method according to ~~claim 4~~ claim 31, wherein the step of routing a data packet through the logical network includes routing the data packet according to rules for handling and moving data packets in an Internet Protocol (IP) is-used network.

8. (Currently Amended) The method according to ~~claim 4~~ claim 31, wherein the step of routing a data packet through the logical network includes routing the data packet according to rules for handling and moving data packets in a cell switching technology-is-used network.

9. (Currently Amended) The method according to claim 8, wherein the step of routing the data packet according to rules for handling and moving data packets in a cell switching is-performed network includes routing the data packet according to rules for handling and moving data packets in an asynchronous transfer mode network.

10. (Currently Amended) The method according to ~~claim 1, wherein~~ claim 31, further comprising utilizing an Internet Control Message Protocols Protocol (ICMP) provides to provide network services to a plurality of upper layers.

11. (Currently Amended) The method according to ~~claim 4~~ claim 7, wherein the step of associating a logical communication network with the physical transportation network includes transferring Internet Protocol Addresses are-transferred to data link addresses.

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12. (Currently Amended) The method according to claim 11, wherein the Internet Protocol Addresses are transferred to the ~~Data-Link-Addresses~~ data link addresses according to an Address Resolution Protocol.

13. (Currently Amended) The method according to ~~claim 4~~ claim 31, wherein the step of routing a data packet through the logical network includes routing the data packet according to rules for handling and moving data packets in a network utilizing at least one interior gateway routing protocol is used.

14. (Currently Amended) The method according to claim 13, wherein the step of routing the data packet according to rules for handling and moving data packets in a network utilizing at least one interior gateway routing protocol includes routing the data packet according to rules for handling and moving data packets in a network utilizing an open shortest path first protocol is used.

15. (Currently Amended) The method according to ~~claim 4~~ claim 31, wherein the step of routing a data packet through the logical network includes routing the data packet according to rules for handling and moving data packets in a network utilizing a packet-scheduling algorithm is used.

16. (Currently Amended) The method according to claim 15, wherein the step of routing the data packet according to rules for handling and moving data packets in a network utilizing a packet-scheduling algorithm includes routing the data packet according to rules for handling and moving data packets in a network in which packet-scheduling is performed with weighted fair queuing.

17. (Currently Amended) The method according to ~~claim 4~~ claim 31, wherein at least one the step of associating a logical communication network with the physical transportation network includes associating a virtual private network is used with the physical transportation network.

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18. (Currently Amended) The method according to ~~claim 4~~ claim 31, wherein the step of routing a data packet through the logical network includes routing the data packet utilizing differentiated services are-used.

19. (Currently Amended) The method according to ~~claim 4~~ claim 31, wherein the step of routing a data packet through the logical network includes utilizing a communication protocol signals to signal a router to reserve bandwidth for a real-time transmission.

20. (Currently Amended) The method according to ~~claim 4~~ claim 31, wherein [[a]] the step of routing a data packet through the logical network includes routing the data packet utilizing multiprotocol label switching is-used.

21. (Canceled)

22. (Currently Amended) The method according to ~~claim 4~~ claim 31, wherein the step of routing a data packet through the logical network includes routing the data packet according to rules for handling and moving data packets in a transmission control protocol is-used network.

23. (Canceled)

24. (Currently Amended) The method according to ~~claim 4~~ claim 31, wherein the step of routing a data packet through the logical network includes routing the data packet according to rules for handling and moving data packets in a real-time protocol is used.

25. (Currently Amended) The method according to ~~claim 4~~ claim 31, wherein a movement of a further comprising synchronizing the routing of the logical packet and the at least one physical object are synchronized physical object.

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26-30. (Canceled)

31. (New) A method of controlling the transport of a physical object from a sending station to a receiving station, said method comprising the steps of:

providing a physical transportation network connecting the sending station and the receiving station, said physical transportation network comprising a plurality of physical routers connected by a plurality of physical transportation links which physically transport the physical object from one physical router to another, wherein each physical router has a plurality of incoming and outgoing physical transportation links connected thereto;

associating a logical communication network with the physical transportation network, said logical communication network comprising a plurality of logical routers connected by a plurality of communication links which transport data packets from one logical router to another, wherein each logical router has a plurality of incoming and outgoing ports connected to a plurality of communication links, wherein the logical communication network and the physical transportation network have the same configuration, providing a one-to-one correspondence between the physical routers and the logical routers and between the physical transportation links and the communication links;

routing a data packet through the logical network from the sending station to the receiving station according to rules for handling and moving data packets in a telecommunication protocol;

determining the path taken by the data packet; and

transporting the physical object through the physical network from the sending station to the receiving station over a physical path corresponding to the path taken by the data packet through the logical network.

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32. (New) A system for controlling the transport of a physical object having mass and size from a sending station to a receiving station, said system comprising:

a physical transportation network connecting the sending station and the receiving station, said physical transportation network comprising a plurality of physical routers connected by a plurality of physical transportation links which physically transport the physical object from one physical router to another, wherein each physical router has a plurality of incoming and outgoing physical transportation links connected thereto;

a logical communication network associated with the physical transportation network, said logical communication network comprising a plurality of logical routers connected by a plurality of communication links which transport data packets from one logical router to another, wherein each logical router has a plurality of incoming and outgoing ports connected to a plurality of communication links, wherein the logical communication network and the physical transportation network have the same configuration, providing a one-to-one correspondence between the physical routers and the logical routers and between the physical transportation links and the communication links;

a communication unit that routes a data packet through the logical network from the sending station to the receiving station according to rules for handling and moving data packets in a telecommunication protocol;

means for determining the path taken by the data packet; and

means for controlling the physical network to transport the physical object through the physical network from the sending station to the receiving station over a physical path corresponding to the path taken by the data packet through the logical network.

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33. (New) A control system for controlling the transport of a physical object having mass and size between at least two of a sending station, a receiving station, and a physical router, said control system comprising:

a communication network having logical nodes corresponding to the sending station, the receiving station, and the physical router;

means for determining a path followed by a data packet transmitted in accordance with a telecommunication protocol through the communication network between at least two of the logical nodes; and

means for transporting the physical object over a physical path corresponding to the path followed by the data packet.

34. (New) A physical guide for interfacing between a logical node in a communication network and a physical router in a corresponding physical transportation network that transports physical objects having mass and size, said physical guide comprising:

means for interfacing with the logical node to obtain information regarding a path of a data packet transmitted through the communication network in accordance with a telecommunication protocol;

means for determining physical parameters for controlling the physical router, said physical parameters corresponding to the information from the logical node regarding the path of the data packet; and

means for controlling the physical router to transport the physical object over a physical path in the physical transportation network corresponding to the path of the data packet through the communication network.

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35. (New) A computer program adapted to interface between a logical node in a communication network and a physical router in a corresponding physical transportation network that transports physical objects having mass and size, said computer program comprising:

a software module that interfaces with the logical node to obtain information regarding a path of a data packet transmitted through the communication network in accordance with a telecommunication protocol;

a software module that determines physical parameters for controlling the physical router, said physical parameters corresponding to the information from the logical node regarding the path of the data packet; and

a software module that controls the physical router to transport the physical object over a physical path in the physical transportation network corresponding to the path of the data packet through the communication network.